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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,373	09/14/2005	Hans Houben	14234	6170

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Orum & Roth  
Suite 1616  
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EXAMINER

ROGERS, DAVID A

ART UNIT	PAPER NUMBER
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2856

MAIL DATE	DELIVERY MODE
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10/09/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/549,373

Applicant(s)

HOUBEN ET AL.

Examiner

David A. Rogers

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 9/14/05.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informality. The written description recites the term "curvature" throughout. From the written description it would appear that the term "curvature" could be interpreted as either "radius of curvature" or "arc length." It is requested that the applicant amend the written description to recite either "radius of curvature" or "arc length", as appropriate, in order to better understand the invention. Appropriate correction is required.

### ***Claim Objections***

2. Claims 1, 3-5, 7-9, 12, 14, and 15 are objected to because of the following informality.

Claims 1, 3-5, 8, 9, 12, 14, and 15 recite the term "curvature" throughout. From the written description it would appear that the term "curvature" could be interpreted as either "radius of curvature" or "arc length". It is requested that the applicant amend the claims to recite either "radius of curvature" or "arc length", as appropriate, in order to better understand the claims.

In claim 1 the phrase "a curved curve...whose distance from a second plane...increases...with a growth rate, that decreases at least in average" is not understood. The applicant's written description does not clearly indicate what is meant by; i.e., what is encompassed by, a growth rate that decreases "at

least in average.” The applicant is requested to either point out where in the written description what is meant by a growth rate that decreases “at least in average” or cancel the subject matter from the claim.

Claim 1 recites a shaped member having a “curved curve.” It is requested that this term be replaced with “curved surface” in order to improve readability.

Claim 1 recites a shaped member having a curve whose distance from a center plane increases with a decreasing growth rate, but is “not merely an arc of a circle.” This phrase is a rather overly complicated way of describing the surface as being elliptical. It is requested that the claims be amended to better describe the surface as being elliptical in order to improve readability and understanding of the claims.

Claim 1 and 13 recite the shape of the various curves that form the contact surface in terms of various planes; i.e., a set of mutually parallel first planes, lines of intersection with third planes, that intersect the contact surface. This appears to add a level of obscurity that is wholly unnecessary since the planes, as used in the written description, don’t form any part of the contact surface’s shape. The applicant is requested to amend the claims in order to remove the reference to the planes and use a better descriptor; e.g., the contact surface has a generally elliptical shape.

Claims 3-5 and 7 are objected to under 37 C.F.R. 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a

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previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 1 requires a surface a surface that increases in distance from the center plane as the surface moves farther from the center plane at a decreasing growth rate. This must be an elliptical surface. However, claim 3 requires that the surface also comprise a series of concave sections. A surface cannot have both concave sections and also be essentially elliptical. The concave sections will have a surface that increases in distance from the center plane at an increasing growth rate (up to an apex) and then they will increase in distance from the center plane at a decreasing growth rate.

Appropriate correction is required.

***Claim Rejections - 35 U.S.C. § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-7, 10-12, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent 6,549,125 to Nigon *et al.* in view of Japanese Laid Open Patent Application Publication JP-11308738 to Nakada.

For the purposes of this rejection the phrase "a curved curve...whose distance from a second plane...increases...with a growth rate, that decreases at

least in average” is not being considered as the dependent claims are limited to a curved sections on the contact surface.

Nigon *et al.* teaches a shaped member (reference item 20) for mounting to the rim of a wheel. The shaped member is adapted to monitor the pressure in the tire. Nigon *et al.* also teaches that the lower part of the shaped member is a contact surface that is curved to fit to existing rims. Nigon *et al.* states that numerous differently-sized shaped members must be produced in order to accommodate the known differently-sized rims. Nigon *et al.* does not teach a single shaped member having a contact surface that can accommodate differently-sized rims.

Nakada teaches a shaped member (reference item 1) having a width, a thickness, and a curved contact surface. The curved contact surface is formed of a first arced section (reference item 3) having a small radius of curvature. The curved contact surface has a second arced section (reference items 4a and 4b) formed of a radius of curvature larger than the first arced section. The curved contact surface may also have a third arced section (reference items 5a and 5b) formed of a radius of curvature larger than the second arced section. As seen in figure 1B the sections allow the shaped member to accommodate differently-sized objects. The shaped object must inherently have a plurality of planes analogous to the planes (reference item 3) shown in the applicant's figure 1. It is also inherent that Nakada's shaped member also has a second plane that bisects the shaped member into two equal halves (a right half and a

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left half of the member shown in figure 4). This second plane must be perpendicular to the first planes.

It would have been obvious to modify the teachings of Nigon *et al.* with the teachings of Nakada to provide a shaped member having regions of different curvature in order to allow the member to accommodate differently-sized rims without the need for having separate parts.

With regard to claim 1's phrase "a curved curve...whose distance from a second plane...increases...with a growth rate, that decreases at least in average" it is considered obvious in view of the teachings of Nakada in order to provide the specific curves on the lower surface so that the shaped member of McLaughlin *et al.* is able to fit onto the surfaces of known rims.

With regard to claim 3 the term "curvature" is interpreted to be analogous with "arc length." It is considered obvious to adapt the teachings of Nakada to provide the outer curved sections; i.e., sections 4a/4b to have arc length smaller than the inner section; i.e., section 3 (actually half of section 3). This would allow the small sensor of Nigon *et al.* to be adapted to numerous rims, but yet still have a small size.

With regard to claim 4 it is evident from Nakada's figure 1B that the individual curved sections have a constant radius of curvature.

With regard to claim 5 it is evident from Nakada's figure 1B that the radius of curvature changes abruptly between two adjacent sections.

With regard to claim 6 it would appear from Nakada's figures that the individual sections are of equal length. With regard to claim 7 it is considered obvious to adapt the teachings of Nakada to provide the inner curved sections; i.e., both halves of section 3, to have arc lengths larger than the outer sections. By adapting the teachings of Nakada to make the outer sections have smaller arc lengths than the inner section; i.e., section 3 (actually half of section 3) would allow the small sensor of Nigon *et al.* to be adapted to numerous rims, but yet still have a small size.

With regard to claims 10-12 it is evident from Nakada's figure 1B that both halves of the shaped member have the same general shape, and that opposing sections have the same radius of curvature.

With regard to claim 16 and 18 Nigon *et al.* teaches that the shaped member is a housing for sensors including a pressure sensor. The electronics (reference item 38) can be considered a device for measuring the pressure.

With regard to claim 17 the housing of Nigon *et al.* is a carrier for various other element such as the antenna (reference item 38), the electronics (reference item 38), and/or the battery (reference item 40).

5. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nigon *et al.* and Nakada as applied to claim 1 above above, and further in view of United States Patent 4,316,374 to Nagatsuma.

Nigon *et al.* teaches that it is known to provide a sensor for mounting to the inner surface of a rim. Nigon *et al.* does not expressly teach a sensor



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having a contact surface that extends in a convex manner in a direction parallel to the axis of the rim; e.g., along the lines of intersection with third planes that intersect the curve perpendicularly.

Nagatsuma, however, teaches that known rims (reference item 21) have a generally concave surface when viewed in cross-section. See figure 6.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Nigon *et al.* and Nakada with the teachings of Nagatsuma in order to provide a convex surface in order to allow the housing of Nigon *et al.* to properly mate to the convex surface of known rims; especially given that Nigon *et al.* teaches that the contact surface must be curved to fit to existing rims.

With regard to claims 14 and 15 it is considered obvious and one of ordinary skill in the art would be motivated to adapt the size and shape of the contact surface to fit a particular rim so that the maximum surface area can be made available for bonding. See also MPEP 2144.04 citing *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) (The court held that the configuration of the matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed container was significant.).

6. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nigon *et al.* and Nakada as applied to claim 1 above, and further in view of United States Patent 5,699,041 to Ballyns.

Nigon *et al.* and Nakada teach a shaped member attached to the rim of a wheel. Nigon *et al.* teaches that the shaped member can be mounted to the rim using pins (reference item 18) and a locking plate (reference item 26). Nigon *et al.* does not teach a shaped member attached to the rim by bonding or an adhesive.

Ballyns teaches a shaped member attached to the rim of a wheel. Ballyns teaches that the shaped member can be glued, welded, or soldered, or any suitable way. See column 3 (lines 15-19).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Nigon *et al.* and Nakada with the teachings of Ballyns in order to glue or bond the shaped member to the rim as these are known methods for attaching. The claim would have been obvious because the substitution of one method for attaching with other known methods would have been obvious to one skilled in the art to achieve the predictable result of securing the shaped member to the rim.

7. Claims 1, 2, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nigon *et al.* in view of German Patent Application Publication DE 19626144 to Albinski.

For the purposes of this rejection the phrase “a curved curve...whose distance from a second plane...increases...with a growth rate, that decreases at least in average” is being considered as encompassing a continuous curve surface.

Nigon *et al.* teaches a shaped member (reference item 20) for mounting to the rim of a wheel. The shaped member is adapted to monitor the pressure in the tire. Nigon *et al.* also teaches that the lower part of the shaped member is a contact surface that is curved to fit to existing rims. Nigon *et al.* states that numerous differently-sized shaped members must be produced in order to accommodate the known differently-sized rims. Nigon *et al.* does not teach a single shaped member having a contact surface that can accommodate differently-sized rims.

Albinski teaches that it is known to provide a shaped member fitting to a rim that has a continuous contact surface so that the shaped member can fit to the outer surface of almost any rim.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Nigon *et al.* with the teachings of Albinski in order to provide a continuous contact surface so that the shaped member can fit to numerous rims so that as to avoid the need to produce separate members for each rim type.

### **Conclusion**

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Rogers whose telephone number is (571) 272-2205. The examiner can normally be reached on Monday - Friday (0730 - 1600). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on

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(571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David Rogers/  
Examiner - Group Art Unit 2856